

**ABSTRACT OF THE DISCLOSURE**

Stimulating rays are linearly irradiated onto an area of a stimulable phosphor sheet. Light emitted by the sheet is received with one surface of a light guide device, which is located such that the one surface stands facing the linear area of the sheet exposed to the linear stimulating rays. The emitted light, which has thus been received, is guided through the light guide device toward end faces of the light guide device. The emitted light, which has been radiated out from at least one end face of the light guide device, is detected with a line sensor comprising photoelectric conversion devices arrayed along the at least one end face of the light guide device.